

CHAPMAN (W.C.)

RESORCIN

—AS AN—

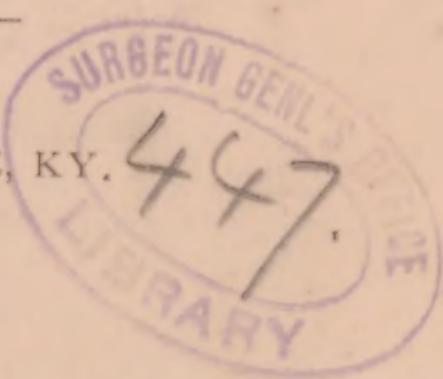
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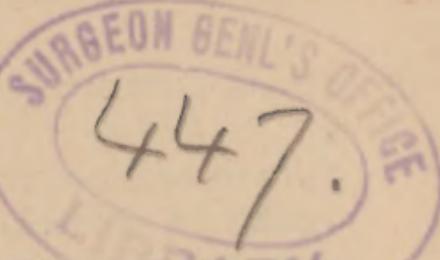
—BY—

W. CARROLL CHAPMAN, M. D.

—OF—

LOUISVILLE, KY.





RESORCIN AS AN ANTIPYRETIC

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BY W. CARROLL CHAPMAN, M. D.

Mr. President and Gentlemen:

It is my wish to call the attention of the medical profession more closely to a drug which has been especially under my observation since 1884. During a period of seven years I have prescribed resorcin almost daily, as an antipyretic, in the different fevers peculiar to this climate, with most satisfactory results; and particularly in the pyrexia attending septicaemia, malaria, typhoid fever, measles, dysentery and cholera infantum have its effects been highly gratifying. Its value has been underestimated by those authorities who have given it any thing like a thorough trial, to such an extent that few of the *Materia Medica's* give it any mention at all, Remington's *Pharmaeopoeia* merely names it as an antiseptic. The U. S. dispensatory, until the fifteenth and sixteenth editions, barely gave it a passing notice. The sixteenth edition grants it more space and reviews it at some length, from which I shall quote later on. Barthalow's *Materia Medica*,

fourth edition, contains the earliest account of resorcin, I have seen, which approaches accuracy in describing its physiological and therapeutical action. Even he classes it with the antiseptics, though he makes more mention of it in connection with its antipyretic action, and states that "in intermittent fever remarkable results have been lately obtained, which, if confirmed, will put resorcin in the front rank of remedies for malarial diseases. Indeed, it is highly probable that in one of the members of this group we will presently have a real rival and an equal to quinine."

Having then been classed as an antiseptic; having received merely passing notice heretofore; having been looked upon by some experimenters with distrust as dangerous; what wonder that the antipyretic value of resorcin is little known and that precedence is given other remedies lacking in some of the special properties, possessed by resorcin, which make it of the highest worth, in the diseases mentioned above? Under these circumstances I feel that this article would be greatly shorn of its value were the history and properties of resorcin omitted; and, in relating them, will cite Andeer as my principal authority.

History.—Resorcin is a chemical compound, discovered by Hlasiwetz and Barth, and was obtained from certain

resins by the action of fusing alkalies. They assigned to the new compound the name resorcin, partly because it is derived from a resin, and partly because it has some similarity to orcin a peculiar substance obtained from archil. Subsequently resorcin was constructed synthetically by Korner, and at the present time it is obtained in various ways the product being both pure and cheap.

Properties.—Resorcin is a member of the phenol group. It occurs in tabular prismatic chrysants, colorless or slightly pinkish, rather shining and lustrous, somewhat sweetish taste, with a little after-pungency. When struck or rubbed in the dark, it appears phosphorescent. Odor very slightly pronounced. It is freely soluble in water in the proportion of 86.4 parts of resorcin to 100 parts of water at 0° C. It is dissolved by all liquids except chloroform and carbon sulphide. The best vehicles are water, syrup of lemon, or glycerine. It is antipyretic, antiseptic and antifermentative.

Dose.—For adults two grains to two scruples.

Antagonists.—From the physiological stand-point, resorcin is antagonized by the cerebral excitants, by the agents which raise the arterial tension, and by the cardiae and respiratory stimulents—Atropia especially.

Synergists—Quinia, aconite, salicylic acid, carbolic acid, etc.

Physiological Actions.—Resorcin does not irritate, nor is it absorbed by the unbroken integument. The solution injected into the subcutaneous tissues produces but little irritation, and never inflammation and abscess. It has decided anti-ferment properties, arrests decomposition in animal tissues, deodorizes, and is destructive of the minute organisms on the presence of which putrefactive decomposition is dependent; and thus changes the character and odor of the contents of the alimentary canal in certain diseases; besides having as claimed by Lichtheim and others, a specific action upon the mucous membrane.

When a considerable dose of resorcin, thirty to fourty grains, is administered to a person in a fever, in a few minutes a sense of heat is felt about the epigastrium, and spreads thence over the system; the face flushes and grows hot, the eyes glisten, the breathing and pulse are accelerated, and dizziness, with ringing in the ears, and frontal headache are experienced. A good deal of discomfort, oppression of the chest, and a sense of distension of the head, are usually produced; but these sensations subside in from ten to fifteen minutes, the skin then grows moist, and in a few minutes more a profuse perspiration is pouring out on

the surface of the body. The pulse then falls, coolness succeeds to heat, languor to tension, and the temperature of the body declines several degrees. If the feverish state has no special features, the lessening of the pulse and the reduction of the temperature to the normal occurs in about one hour. Shoemaker says thirty to sixty grains reduce the temperature in two or three hours; but he certainly must have used it in some other fever than the ones named above for the effect to have been so delayed. He further says resorcin has the disadvantage of causing nausea. I have never seen any other author make this claim. On the other hand all the authors I have consulted, except him, recommend it strongly in treatment of the various gastro-intestinal affections, partly for its anti-fermentative action, and partly for a specific influence upon the mucous membrane. In my experience nausea has only in the rarest instances been caused by resorcin. The pulse may be slowed one-third and the reduction of temperature be as much as four degrees Far. by a dose of thirty grains. This reduction would last from two to four hours. When the rise of temperature begins again, a sense of chilliness is experienced, which may even take the form of a distinct rigor. Lichtheim observed great difference in the power of resorcin in different

fevers. The less the tendency to spontaneous remissions, the less the antipyretic effect. All fevers yield to some extent to its antipyretic action, but pneumonia, bronchitis and erysipelas are least amenable. The preliminary stage of excitement, which lasts from ten to twenty minutes may be accompanied by delirium.

Toxic Action.—No case of fatal poisoning, so far as known, has been recorded. Sixty grains have caused collapse and unconsciousness. Andeer took one hundred and fifty grains and shortly after became unconscious, this was followed by epileptiform convulsions, opisthotonus, and increased respiration. Consciousness returned in five hours. Very large doses cause immediate diastolic arrest of whole heart. (U. S. dispensatory 16th ed.)

Therapy.—Although some correspondence exists in the therapeutical applications of the members of the phenol group, especially between their anti-fermentative and antipyretic action, resorcin is much the more desirable for a number of reasons. 1st. It is fully as, if not the most, reliable. 2nd. The ease with which it can be administered; being freely soluble, of pleasant taste, and free from disagreeable odor. 3rd. It not only does not cause nausea and vomiting, but tends to correct disorders arising from fermentation, or a catarrhal condition of

the gastro-intestinal tract. 4th. The physiological action is so plain and can be watched with such ease. 5th. In a dose sufficient to reduce the temperature three or four degrees (thirty to forty grains) there is not the least danger.

As a remedy in septicæmia I regard it as being without an equal, in the list of therapeutic agents, for controlling the febrile stage and the septic condition. I know of no way I could explain the cause of my belief in this than to cite you to my experience in an epidemic of septicæmia. During the spring of 1884, while resident physician of the Maternity Hospital in Baltimore, puerperal septicæmia developed. The two first cases were attended according to the usual line of treatment in that disease : intrauterine douche, iodoform suppositories, quinia, salycilate of soda, digitalis, with ice cap and bags, followed by stimulants. Both cases died on the sixth or eighth day of the disease.

Case 3, Annie A——, aged 28 years; second child. On the fourth day after delivery was seized with a chill followed by high fever, and ordered to be moved into the septicæmic ward. Temperature 104°, pulse 110: characteristic offensive discharge. Immediately began routine of treatment as related above, without being able to control the fever, and the stomach becoming so disordered that the

patient could retain nothing more than small quantities of stimulants. In my search for other remedies, and eagerness to grasp anything promising the faintest hope, I found and tried resorcin. On the sixth day of the disease, tenth day after delivery with her temperature 106.4°, pulse 135, I administered thirty grains of resorcin and sat by to watch the result. She retained it. In about ten minuets the eyes began to glisten, the face flushed, the respiration quickened, the pulse 140, with increased restlessness. This lasted for a few minutes when the forehead became moist closely followed by profuse perspiration over the surface of the body: the breathing became slower and easier and in one hours time I found her temperature 103.5° and pulse 110. Gave twenty grains more and ordered five grains every hour for four hours at which time I found the temperature 101°, pulse 92. Patient ate an egg and found no difficulty in retaining it, or medicine or stimulants. With five grains every hour or two after this, was able to keep the temperature ranging from 100° to 102°, except at one time, when the resorcin was omitted for several doses, when the temperature went to 103°. Although she was able to retain stimulants and liquid food from this on the patient died in the third week of the disease.

Encouraged by the effects of the resor-

cin in this case I began its use in each subsequent case, accompanied, at times, by the ice cap and of course the intra-uterine douche and stimulants, being able to control the fever to a great extent. Never found it necessary to give over thirty grains in a single dose. The stomach rarely ever refused to retain liquid food and stimulants.

Out of eight cases of septicaemia four recovered and four died. Of those that died, two did so before the resorcin was used. In the third, resorcin was not begun until the sixth day of the disease, then, after other remedies had failed, the temperature responded to its use. Of the five cases treated with resorcin, from the beginning, four recovered. It is true the latter cases seemed milder, all the way through; but might not this been due to the resorcin itself, by the readiness with which the fever responded to the remedy, the slight derangement of the stomach, allowing a freer use of sustaining remedies, and finally to its antiseptic properties? Of this latter quality I wish to ask your consideration especially. It can be done most briefly by reciting one more case.

Mrs. L——, January 18th, 1891; abortion, fourth month of pregnancy. Great deal of hemorrhage, after foetus passed, which continued for two hours; so decided to take the placenta away. Did so

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in small pieces as long as I could discover the least particle. Ordered vaginal injections one two thousandth per cent, Bichloride of mercury. Previous history of malaria. Fourth day after delivery the lochia assumed offensive odor; diarrhoea, faeces pale, ashen color. Prescribed quinia sulph-thrice grains, resorcin five grains every two hours. Sixth day chilly sensations, temperature 102.5°, pulse 110. Peculiar appearance of the eyes and face, with red cheeks more distinctly marked of evening, as was the temperature which reached 103°, as the highest. Patient took a quart or three pints of milk daily and stimulants. With this treatment the temperature except on two days ranged from 100° to 102°. Fever subsided on fifteenth day, but recovery slow. To those who doubt this having been septic poisoning I could, except for space, relate one more case under my care, precisely similar, except the malarial history, with same treatment, and recovery dating from the twentieth day.

While these few cases are not sufficient to form positive knowledge of the influence of resorcin in septicæmia, they seem worthy of the careful consideration, of reliable observers and, if time and trial confirm them, septicæmia will not be so much dreaded in the future.

In malaria, remittent form, it reduces

the high fever more quickly than quinia but is best combined with the last named drug, in order to eradicate the poison from the system; though, I have cured remittent fever with the use of resorcin alone. In the intermittent type it is best to give resorcin during the exacerbation and quinia during the intermission.

In typhoid fever it certainly seems to be indicated. While it does not, of course, control the fever it is fully as efficient, in this line, as any other antipyretic; and given in five grain doses, every two hours, will, I believe, prevent excessive rise of temperature. It has the decided advantage of not deranging the stomach, and it is in the rarest instances that liquid food will not be admitted. By its anti-fermentative action it prevents excessive tympanitis. If the belief of Hoefer, Lichtheim and others is confirmed, as to the specific action of resorcin on the mucous membrane, it will surely be indicated as a guard against excessive sloughing of the Peyerian and solitary glands and the consequent intestinal ulceration.

In measles in the beginning of the second stage, when the eruption is slow about coming to the surface and the skin is dry, with irritating cough, it fills the office of sudorific and antipyretic, hastening the eruption, soothing the irritation and reducing the temperature.

In dysentery and cholera infantum I

have given it less often than in the diseases mentioned above, but have found the results perfectly satisfactory.

In giving resorcin a trial, those who administer it first, in pneumonia, bronchitis or erysipelas and anticipate its best effect, are likely to be disappointed, because it not only is not especially indicated in these diseases, but it seems here to have no superiority over a number of other antipyretics.

To summarize then, resorcin is most valuable in fevers where there is a tendency to gastro-intestinal derangement, whether due to septic or other cause; in patients where a pleasant medicine is required, for children especially; in cases where the fever is very high, and a quick result is desired, and the physician wishes to watch the physiological action of the drug; and finally, in measles, when temperture is high and the eurruption delayed.

